

## **SPORTS SUNGLASSES**

### **PRIORITY CLAIM**

**[0001]** This patent application claims the benefit of the priority date of United States Provisional Patent Application Serial No. 60/445,867, filed on February 6, 2003 and entitled SURF SHADES-SUNGLASSES FOR USE IN AND ON THE WATER pursuant to 35 USC 119. The entire contents of this provisional patent application are hereby expressly incorporated by reference.

### **FIELD OF THE INVENTION**

**[0002]** The present invention relates generally to sporting goods. The present invention relates more particularly to glasses, sunglasses, and the like that are especially suitable for use in sports, particularly water sports.

### **BACKGROUND OF THE INVENTION**

**[0003]** Sunglasses for mitigating bright light and glare are well known. Sunglasses are frequently worn by people who are engaging in outdoor sports activities. For example, snow skiers, bicyclists, and boaters frequently wear sunglasses.

**[0004]** Glare frequently interferes with sports enthusiasts' ability to perform. Glare is particularly problematic in water sports activities, where sunlight is commonly reflected off of the water and into a person's eyes. Glare not only inhibits desired performance, but may also contribute to accidents, such as when it prevents a person from seeing adequately. It is easy to appreciate the importance of seeing nearby swimmers when boating, for example.

**[0005]** It can also be desirable to wear sunglasses so as to mitigate the health risks associated with overexposure of the eyes to sunlight, particularly the ultraviolet (UV) component thereof. It is well known that overexposure to ultraviolet radiation from the sun can cause or exacerbate cataracts, for example.

[0006] However, although contemporary sunglasses have proven generally suitable for their intended purposes, they possess inherent deficiencies that detract from their overall effectiveness and desirability. For example, the use of sunglasses in water sports activities presents problems with their potential loss if they inadvertently come off of the wearer. This is particularly true if the sunglasses sink into the water.

[0007] The potential loss of sunglasses during water sports activities is troublesome because sunglasses can be expensive and because participation in water sports activities such as surfing, windsurfing, and water skiing provides ample opportunity for the sunglasses to be knocked off of the wearer. The loss of sunglasses during any sporting activity can be especially troublesome if they are prescription sunglasses and cannot be immediately replaced.

[0008] In an attempt to mitigate the problem of having sunglasses inadvertently come off during water sports activities, companies such as Croakies of Jackson Hole, Wyoming have developed straps which attach to sunglasses and which, to some degree, secure the sunglasses to a wearer and help prevent their loss.

[0009] Croakies also provides a product having a buoyant strap, so that the sunglass will float if they do inadvertently come off of a wearer during a water sports activity. This way, the sunglasses can generally be easily recovered.

[0010] However, such contemporary straps, even if buoyant, do not always prevent the loss of sunglass that inadvertently come off during a water sports activity. Sometimes, the wearer may travel a considerable distance after the sunglasses come off, thus making finding them difficult even if they are floating.

[0011] It is easy to appreciate that by the time a surfer, water skier or boater manages to come to a stop after losing a pair of sunglasses while traveling fast on the water, that person may be far from the location where the sunglasses were lost. Indeed, the wearer may not even be able to pinpoint the location where the sunglasses were lost. Therefore, sometimes the sunglasses cannot be retrieved even if they are attached to a floating strap.

**[0012]** Because they may easily become lost, sunglasses are not worn by water sports enthusiasts as frequently as they may desire.

**[0013]** Another problem associated with the wearing of contemporary sunglasses, whether used with a strap such as the Croakies product or not, is that of injury caused by the frame of the sunglasses during a traumatic event. For example, if the glasses are pushed into the wearer's face, then the rigid frames thereof may cause injury to the wearer's eye(s) or nearby tissue. This could occur, for example, when a surfer is struck in the face by a surfboard after a wipeout.

**[0014]** As such, although the prior art has recognized, to a limited extent, the problem of losing sunglasses during water sports and similar activities and the problem of injuries to the eye caused by rigid frames, the proposed solutions have, to date, been ineffective in providing a satisfactory remedy. Therefore, it is desirable to provide glasses, such as sunglasses, which are not likely to be lost during sports activities and which mitigate the likelihood of injury while being worn.

## **BRIEF SUMMARY OF THE INVENTION**

**[0015]** While the apparatus and method has or will be described for the sake of grammatical fluidity with functional explanations, it is to be expressly understood that the claims, unless expressly formulated under 35 USC 112, are not to be construed as necessarily limited in any way by the construction of "means" or "steps" limitations, but are to be accorded the full scope of the meaning and equivalents of the definition provided by the claims under the judicial doctrine of equivalents, and in the case where the claims are expressly formulated under 35 USC 112 are to be accorded full statutory equivalents under 35 USC 112.

**[0016]** The present invention specifically addresses and alleviates the above mentioned deficiencies associated with the prior art. More particularly, the present invention comprises glasses, such as sunglasses, for use in sports activities. According to one aspect, the glasses comprise a frame, at least one lens formed to the frame, and a strap formed to the frame. The strap is configured to inhibit the glasses from falling off

of a wearer, such as during vigorous sports activities. Thus, the strap inhibits undesirable loss of the glasses.

**[0017]** A leash is optionally formed to the strap and a collar is formed to the leash. The leash and collar cooperate to further inhibit undesirable loss of the glasses. That is, if the strap fails to keep the glasses on a user's head, the strap and the collar cooperate to keep the glasses proximate the user so that they do not become lost.

**[0018]** According to one aspect, the frame comprises a flexible frame. For example, the frame may be comprised of a resilient polymer material, natural rubber, silicone rubber, or any other desired flexible material.

**[0019]** The lenses may comprise either sunglass lenses or non-sunglass lenses. Thus, the glasses may be clear, tinted, or photogray (darken in the presence of light). The lenses may comprise either prescription lenses or non-prescription lenses.

**[0020]** The strap, the leash, and the collar may comprise neoprene, natural rubber, synthetic rubber such as silicone rubber, or any other flexible material. The strap, the leash, and/or the collar may optionally be buoyant so as to float a pair of glasses attached to the leash assembly. Thus, if the leash and collar fail to keep the glasses proximate the wearer, then they will preferably float, so as to facilitate their being more easily found.

**[0021]** The collar preferably comprises a release. The release allows the collar to be placed around a wearer's neck. The release also allows the collar to come off of the wearer if the leash assembly and/or glasses become caught. For example, if a surfer wipes out and the leash assembly becomes caught on some underwater coral, then the release opens and allows the collar to come off of the wearer, so that the wearer is less likely to drown or otherwise sustain injury.

**[0022]** The release may comprise a Velcro release, for example. Alternatively, the release may comprise a snap or other mechanical device that pulls apart, breaks, or otherwise allows the collar to open when the leash is pulled with sufficient force.

**[0023]**        Optionally, the collar is formed of a expandable or stretchable material, such that it can be pulled over the head to be worn.

**[0024]**        As a further alternative, the collar may be formed of an expandable or stretchable material, such as rubber, and configured such that it breaks if pulled upon with sufficient force. Thus, the collar may be stretched so as to be pulled down around the head and onto the neck in order to be worn. It may be removed in a similar fashion during normal use. However, if the glasses or leash assembly become caught underwater, the collar or the leash are configured so as to break and thereby free the wearer. This may be accomplished by providing a weak point in the collar and/or the leash.

**[0025]**        The strap may be either permanently or removably attached to the frame. Thus, the strap may attach to the frame of a pair of glasses by sliding over the earpieces thereof, in the fashion that Croakies are installed upon glasses. Alternatively, the strap may be permanently attached to the ear pieces, or earpiece stubs or other portions of the glasses such as by adhesive bonding, ultrasonic welding, the use of mechanical fasteners, or by forming the strap integrally with respect to the frame.

**[0026]**        The glasses may comprise earpieces, like contemporary glasses. Alternatively, the glasses may comprise earpiece stubs or no earpieces or the like whatsoever. The earpiece is that portion of the glasses which extends toward and partially wraps around the ear. An earpiece stub is similar, but lacks that portion which wraps around the ear and serves as an attachment point for the strap.

**[0027]**        The leash may attach to the strap and the collar by any desired method. For example, the leash may have a loop formed in one or both ends thereof for receiving and attaching to the strap and/or the collar. Alternatively, the leash may be formed integrally with the strap and/or the collar.

**[0028]**        These, as well as other advantages of the present invention, will be more apparent from the following description and drawings. It is understood that changes in

the specific structure shown and described may be made within the scope of the claims, without departing from the spirit of the invention.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

**[0029]** The invention and its various embodiments can now be better understood by turning to the following detailed description of the preferred embodiments which are presented as illustrated examples of the invention defined in the claims. It is expressly understood that the invention as defined by the claims may be broader than the illustrated embodiments described below.

**[0030]** Figure 1 is a perspective view of an exemplary embodiment of the sports glasses of the present invention showing a buoyant strap formed to earpiece stubs of a flexible and resilient frame;

**[0031]** Figure 2 is a perspective view of another exemplary embodiment of the sports glasses of the present invention showing a leash and collar assembly formed to the buoyant strap; and

**[0032]** Figure 3 is a perspective view of yet another exemplary embodiment of the sports glasses of the present invention showing a leash and collar assembly formed to a buoyant strap, which in turn is formed to earpieces of a contemporary pair of sunglasses.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

**[0033]** Many alterations and modifications may be made by those having ordinary skill in the art without departing from the spirit and scope of the invention. Therefore, it must be understood that the illustrated embodiment has been set forth only for the purposes of example and that it should not be taken as limiting the invention as defined by the following claims. For example, notwithstanding the fact that the elements of a claim are set forth below in a certain combination, it must be expressly understood

that the invention includes other combinations of fewer, more or different elements, which are disclosed herein even when not initially claimed in such combinations.

**[0034]** The words used in this specification to describe the invention and its various embodiments are to be understood not only in the sense of their commonly defined meanings, but to include by special definition in this specification structure, material or acts beyond the scope of the commonly defined meanings. Thus if an element can be understood in the context of this specification as including more than one meaning, then its use in a claim must be understood as being generic to all possible meanings supported by the specification and by the word itself.

**[0035]** The definitions of the words or elements of the following claims therefore include not only the combination of elements which are literally set forth, but all equivalent structure, material or acts for performing substantially the same function in substantially the same way to obtain substantially the same result. In this sense it is therefore contemplated that an equivalent substitution of two or more elements may be made for any one of the elements in the claims below or that a single element may be substituted for two or more elements in a claim. Although elements may be described above as acting in certain combinations and even initially claimed as such, it is to be expressly understood that one or more elements from a claimed combination can in some cases be excised from the combination and that the claimed combination may be directed to a subcombination or variation of a subcombination.

**[0036]** Insubstantial changes from the claimed subject matter as viewed by a person with ordinary skill in the art, now known or later devised, are expressly contemplated as being equivalently within the scope of the claims. Therefore, obvious substitutions now or later known to one with ordinary skill in the art are defined to be within the scope of the defined elements.

**[0037]** The claims are thus to be understood to include what is specifically illustrated and described above, what is conceptionally equivalent, what can be obviously substituted and also what essentially incorporates the essential idea of the invention.

**[0038]** Thus, the detailed description set forth below in connection with the appended drawings is intended as a description of the presently preferred embodiments of the invention and is not intended to represent the only forms in which the present invention may be constructed or utilized. The description sets forth the functions and the sequence of steps for constructing and operating the invention in connection with the illustrated embodiments. It is to be understood, however, that the same or equivalent functions may be accomplished by different embodiments that are also intended to be encompassed within the spirit of the invention.

**[0039]** The present invention is illustrated in Figures 1 - 3, which depict presently preferred embodiments thereof. Although the invention discussed with reference to these figures is a pair of sunglasses, those skilled in the art will appreciate that the present invention is applicable to other types of glasses, including non-sunglasses, prescription glasses, goggles (such as those commonly used for swimming, snorkeling, scuba diving, water skiing and snow skiing), as well as other types of eyewear. Thus, discussion of the glasses herein as sunglasses is by way of example only, and not by way of limitation.

**[0040]** Referring now to Figure 1, one exemplary embodiment of the present invention comprises a flexible and resilient frame 10, which may be formed of natural rubber, synthetic rubber such as silicone rubber, a resilient polymer material, or any other desired material. The frame 10 is thus preferably soft, lightweight and pliable. Thus, the frame 10 will easily deform and return to its normal shape after an impact or other bending thereof.

**[0041]** Lenses 11 are formed to the frame 10. The lenses may be either sunglass lenses or prescription lenses, as discussed above. The lenses 11 may be either permanently or removably attached to the frame 10 according to well known principles.

**[0042]** Either a pair of lenses or a single lens may be used. For example, a snorkeling or scuba mask made according to the present invention may have a single lens.



**[0043]** By way of contrast, the present invention may alternatively comprise more than two lenses. For example, two lenses for each eye (giving a total of four lenses), may be provided for some applications, such as ski or scuba goggles.

**[0044]** Earpiece stubs 12 extend rearwardly from the frame 10 toward the ears. A strap 13 attaches either permanently or removably to the earpiece stubs 12. Optionally, the earpiece stubs 12 may be hinged to the frame 10. Preferably, at least one end of the strap 13 attaches removably to the associated earpiece stub 12, such that the strap 13 can easily be detached from the frame 10 and cut to a desired length by the user to facilitate comfortable and secure wearing of the sports glasses of the present invention.

**[0045]** The strap 13 may be attached to the earpiece stubs 12 by a stretched fit thereover, in the fashion that Croakies are attached to a contemporary pair of glasses. That is, the strap 13 may be tubular or hollow in construction, such that the earpiece stubs 12 (or the earpieces 20 of Figure 3) can be pushed into and frictionally engage the strap 13. Alternatively, the strap 13 may be adhesively bonded, ultrasonically welded, or attached to the earpiece stub 12 by mechanical fasteners or by any other desired method.

**[0046]** The strap 13 may optionally be integrally formed with the frame 10. Thus, the strap 13 may be formed via the same process as the frame 10 and may be formed from the same material.

**[0047]** Preferably, the strap 13 is formed of a buoyant material which has sufficient buoyancy that it remains afloat when attached to a pair of glasses. The strap 13 may, for example, be formed of neoprene so as to provide the desired buoyancy. Alternatively, sufficient buoyancy to float the glasses may be provided by adding buoyant material to the strap, or to any other component of the present invention.

**[0048]** Referring now to Figure 2, an optional leash assembly, which may be formed to the strap 13, comprises leash 16 and collar 17. The leash 16 and the collar 17 are preferably formed of the same flexible material, such as neoprene. Alternatively,

the leash 16 and the collar 17 may be formed of different materials. For example, the leash 16 may be formed of nylon cord and the collar 17 may be formed of rubber.

**[0049]** The collar 17 preferably comprises a release 18. The release preferably comprises a Velcro release wherein two pieces of Velcro adhere to one another to connect two ends of the collar 17 to one another in a fashion similar to a belt buckle attaching two ends of a belt to one another. Alternatively, the release may comprise a snap or a weak breakable portion of the collar 13. The release 18 is preferably formed near where the leash 16 attaches to the collar 17, such that pulling the leash 16 tends to pull the release 18 open. Thus, pulling on the least 16 will cause the release 18 to open and the collar 17 to come off.

**[0050]** The use of a release is particularly advantageous in the event that the strap, lease, or glasses gets caught on something underwater, as discussed above.

**[0051]** Referring now to Figure 3, a leash assembly comprising a leash 16 and a collar 17 may be provided as an aftermarket product for use with standard contemporary sunglasses or the like. The use of such a leash assembly facilitates the retrofitting of a standard contemporary pair of sunglasses, so as to obtain at least some of the desired characteristics and functionality of the present invention. That is, such retrofitting provides a way to mitigate the undesirable loss of the contemporary pair of sunglasses by providing a leash 16 and a collar 17 which keep the sunglasses with the wearer if they come off of the wearer and by optionally providing buoyancy to float the sunglasses if the become separated from the wearer.

**[0052]** Contemporary glasses have earpieces 20 that may be either hinged or not hinged to the frame 10.

**[0053]** In use, the sports glasses of the present invention shown in Figure 1 are simply slipped on by passing the strap 13 behind the wearer's head. In the event of an accident, such as a surfboard hitting a surfer in the face, the flexible frame 10 is substantially less likely to cause trauma as compared to the rigid frame of a pair of contemporary sunglasses.

**[0054]** In use, the sports glasses of the present invention shown in Figure 2 are generally worn by first putting on the collar 17. This may be accomplished, for example, by opening the release 18, placing the collar 17 about the wearer's neck, and closing the release 18. Alternatively, the collar 13 may comprise a stretchable material, such that the collar 13 can simply be pulled over the wearer's head. The sunglasses are then put on by positioning the strap 13 behind the wearer's head as described above.

**[0055]** In use, the sports glasses of the present invention shown in Figure 3 are put on in a fashion similar to those shown in Figure 2 and discussed above. However, since the leash assembly for the glasses shown in Figure 3 is an aftermarket product, it must be installed upon the glasses before they are worn.

**[0056]** The exemplary leash assembly of Figure 3 is installed upon the glasses by pushing the ends of the strap 13 over the earpieces of the glasses in the fashion that Croakies are installed upon glasses.

**[0057]** Thus, if the sunglasses of either Figure 2 or Figure 3 come off of the wearer's head, such as during a surfing wipeout or duck diving, the wearer can easily reposition the sunglasses upon the head.

**[0058]** If any part of the sun sunglasses and/or leash assembly of either Figure 2 or Figure 3 get caught on an underwater structure (such as coral), on the surfboard, or on any other item, then the release 18 opens as the wearer pulls away from the item and the collar 17 comes off of the wearer, such that the wearer is less likely to become undesirably trapped.

**[0059]** If the sunglasses of either Figure 1 or Figure 2, which both have a buoyant strap 13, come off during use, then they will generally float so that they can easily be located.

**[0060]** Preferably, the lenses of the glasses are formed of scratch resistant, ultraviolet (UV) protection providing, anti-fog, and anti-water spot material. For sunglasses, polarized lenses are preferred.

**[0061]** The present invention may find application in a wide variety of water sports, including surfing, wind surfing, water skiing, wake boarding, skim boarding, kite surfing, jet skiing, boating, white water rafting, snorkeling, scuba diving and others. Indeed, the present invention is not limited to water sports and may application in a wide variety of non-water sports, such as snow skiing, snow boarding, foul or cold weather use, sand storm use, sky diving and others.

**[0062]** If desired, the lease assembly of Figure 2 and Figure 3 can be removed and the sunglasses used in the manner of those of Figure 1.

**[0063]** The strap 13, the leash 16 and the collar 17 can be black, or can be of a color and/or pattern that will increase their visibility, such as on the land, on snow, on sand, on the surface of water, and/or underwater.

**[0064]** Any desired portion of the present invention, including the frame 10, the strap 13, the lease 16, and/or the collar 17 may be made buoyant, so as to enhance the floatability thereof. Further, floats or buoyant members may be added to any desired portion of the sunglasses. Alternatively, any portion of the sunglasses may be made so as to be non-buoyant, as desired.

**[0065]** Thus, the present invention provides sports glasses, such as sunglasses, which are less likely to be lost than contemporary glasses when worn during vigorous sports activities and also provides sports glasses which are less likely to cause injury than contemporary glasses in the event of a spill or other incident.

**[0066]** It is understood that the exemplary embodiments of the sports glasses described herein and shown in the drawings represents only presently preferred embodiments of the invention. Indeed, various modifications and additions may be made to such embodiments without departing from the spirit and scope of the invention.

**[0067]** For example, the leash 16 may be made of either a stretchable material such as elastic or may be made of a non-stretchable material such as nylon cord. Further, the strap 13 may similarly be made of a stretchable material such as neoprene,

rubber, or elastic, or may alternatively be made of a non-stretchable material such as nylon, cloth, or plastic.

**[0068]** Thus, these and other modifications and additions may be obvious to those skilled in the art and may be implemented to adapt the present invention for use in a variety of different applications.